Chapter IV. Agriculture.

Crops.

yellakki, Alpina cardamomum; plantains, *bále*, Musa sapientum; *rági*, Eleusine corocana; great millet, *ken jala*, Sorghum vulgare; *sháve* or *shyáme*, Panicum miliare; jingelly-seed, *volle yellu*, Sesamum indicum; turmeric, *arshina*, Curcuma longa; sweet potatoes, *bella genasu* or *nela kumbalu*, Batatas paniculata; hemp, *ganje* or *bhangi*, Cannabis sativa; and castor-seed, *vudla* or *haralu*, Ricinis communis. The chief pulses or *akkadi* are, black gram, *uddu*, Phaseolus radiatus; green gram, *hesoru*, Phaseolus mungo; horse gram, *kuluddha*, Dolichos uniflorus; Bengal gram, *kadle*, Cicer arietinum; white gram, *alasandi*, Dolichos catjang; and peas, *batáni*, Pisum sativum.

Rice.

The staple produce of the district is rice, *bhatta* or *nellu*, Oryza sativa, which on some lands is grown as a late or cold weather as well as an early or rain crop. Rice is grown all over the district, the earliest crops being near Kárwár; the rest of the lowland coast harvest is a little later, then come the upland crops, and last of all the eastern crops. The coast rice lands are divided into *gazni*, *bailu*, *kar*, *majalu*, *betta*, and *makki banna betta*. *Gazni* lands are in the salt tracts close along the coast; they yield only one crop in the year. *Bailu* lands are the good rice-plots in the lower valleys which being watered by small streams yield every year two crops of rice or one of rice and one of pulse. The first or rain crop is called *kártika* because it is reaped in the month of *Kártik* (November-December), and the second or dry season crop is called *suggi* in Kánarese and *vaingun* in Maráthi or Konkani, both words meaning harvest. *Kar* or Haiga rice lands are the low fields along the rivers and salt water inlets which are flooded during the height of the rains so that the rice cannot be planted till the water falls. *Majalu* and *betta* are on higher ground; *majalu* yields two crops, one of rice watered from rivulets and the other of vegetables or dry grain; *betta* land has small reservoirs which supply water for several weeks after the rains are over. *Makki banna betta* are still higher lands without rivulets or reservoirs, entirely dependent on the rains and apt to lose the crop if the later rains fail.

Above the Sahyádris most rice plots lie in the valleys on the eastern flank of the Sahyádris. From this the rice lands stretch east a little beyond the boundary of the low woodlands as far as the heavy rain reaches which supplies many small reservoirs with water enough to last till January or February.

All rice fields are in the form of terraces, surrounded by small banks to pond the water when the fields are flooded. These terraces vary from an acre to a patch of an eightieth of an acre according to the steepness of the ground. Cocoa-palms are sometimes grown in rice lands, their thick matted roots forming a valuable support to the embankments. Rice is grown in three ways, dry seed or drilled rice *kurige bhatta*, sprouted seed or *mole bhatta*, and planted seedlings or *nala bhatta*. The dry seed system, which requires less labour and exposure and yields a smaller outturn, is commonest above the Sahyádris. The sprouted seed system is commonest below the Sahyádris, except in the best double crop or *bailu* land and in the marsh or *kar* land where seed cannot be sown. In these lands the planting system is followed with a much larger outturn, but also

Crops.

Rice.

with much more labour and exposure. Especially for the sprouted seed and planting systems buffaloes are better than bullocks from their greater power of standing wet and cold.

Under the dry seed or *kurige bhatta* system the seed is sown as soon as the ground has been ploughed and is damp enough for the seeds to sprout. For this the showers of April and May suffice. The heavy and continued falls of the south-west monsoon, though excellent when the plants have gained size and strength, are unsuited for the sowing season. After the seed has been sown by the drill or *kurige*, the rice field is manured with cowdung and smoothed with the crusher or *karada*. For three or four weeks the rain water is allowed to run off as it falls. After the first week the field is weeded with the hoe or *kunte*, which kills the weeds without harming the sprouting seed. At the end of the second week when the plants are four inches high, the field is worked by the weeding hoe or *niru kunte*. About the end of the third week the field is again weeded by dragging over it a branch of prickly bamboos fastened under a board on which the driver stands. When the rice is six inches high the dam openings are shut and the field is flooded. At the end of the third month the field is drained for some days and the weeds are removed. In the fifth month it is again weeded and in the seventh month the crop is reaped. The ears intended for seed are at once thrashed and dried for seven days in the sun. The rest are piled in heaps for eight days and thatched to keep out the rain. The grain is then either beaten out with a stick or trodden by oxen and for three days is dried in the sun. It is stowed in straw bags, and kept in the house till it can be boiled and husked.

Sprouted Rice.

In the sprouted seed or *mole bhatta* system ploughing does not begin till the soil is soaked. In the intervals between the repeated ploughings the field is kept flooded, and just before each ploughing all but two inches of the water is drained off. Before the last ploughing the field is manured with cowdung, or failing cowdung with tree or bush leaves, which is a very inferior manure. When the last ploughing is over the mud is smoothed with a plank drawn by oxen. It is afterwards harrowed by a large rake drawn by a pair of buffaloes or oxen which turns up the weeds which have been loosened by the plough, and opens the soil for the seed. To prepare the seed the straw sackcloth or matting bag in which it is kept, is steeped in water for about eighteen hours. The grain is then laid in a warm close place where within three or four days it sprouts. About a fortnight after the beginning of the rains the water is drained off the field and the sprouted seed is sown broadcast. On the fifth day when the seedlings begin to show, they are half-flooded with water and every day as they grow the quantity of water is increased, and the field is kept flooded until the crop is ripe. About a month after it is sown and again a little later the field is weeded by the hand.

In the rich double crop or *bailu* land the *kártik* or November crop is mostly, and the *suggi* or cold-weather harvest is entirely, sown with sprouted seed. To prepare *bailu* or rich double crop rice land for the second crop, during October and November, the field which

Chapter IV. Agriculture. Crops.

all the time is kept flooded, is first drained off by a small wooden rake-like tool called *shirula*. It is then manured with cowdung and ploughed and smoothed with the ox-rake. The seed is sown early in December. On the ninth day a little water is given, and, as the plants grow, the quantity of water is gradually increased. The rain water generally lasts till the end of the first month. Then with the help of the lever and bucket-lift or *yata* the field is watered from a reservoir or well or more often from a dammed-up stream.

Rice Planting.

For the planting out or *nala bhatta* system the seeds are first thickly sown in nurseries, from which, after about a month, when the rains have well set in and the field is flooded, the seedlings are planted out. The seedlings are brought in baskets to the field, and, in handfuls of eight or nine, are set along lines drawn by the large rake and thrust by the labourers some inches into the mud. The field is kept flooded and is weeded twice with the hand.

There are twenty-three leading kinds of rice: *pandia* large and small, *kaga*, *motalgo*, *belko*, *ajga*, *sanmalgi*, *dabansali*, *jirgesali*, *kotambarsali*, *patni*, *sorti*, *kalo mudgo*, *balari*, *chitgo*, *paksal*, *chintamanisali*, *kharganaki*, *kempu kukum kesari*, *jedu kukum kesari*, *urutgana*, *ambemori*, *somsal*, and *chapral*. In ordinary years the poorer rice is sold at twenty-three to twenty-seven pounds the rupee (Rs. 3 to Rs. 3½ the *man* of forty *shers*) and the better kinds at fifteen to twenty pounds the rupee (Rs. 4 to Rs. 5½ the *man* of forty *shers*). Rice is used by all classes except Kunbis who live near the forests and eat *rági*. The lower classes use the black or cheaper rice and the rich the fine kinds, chiefly the varieties known as *maskati*, *jorsal*, and *kundápuri*, which come from South Kánara. Rice in husk is sent in small quantities to the Malabár districts mostly from the ports of Kárwár, Kumta, Tadri, and Honávar. Some landed proprietors export on their own account, but most of the export business is in the hands of Váni and Konkani traders. Including the assessment it is roughly estimated that an acre of good rice costs about £2 (Rs. 20) to grow and leaves a profit of about £7 10*s.* (Rs. 75), and an acre of fair rice costs about £1 10*s.* (Rs. 15) and leaves a profit of £2 10*s.* (Rs. 25).

Rági or *Náchni*, Eleusine corocana, is widely grown in the hill forest country and is generally eaten by the poorer classes.

Italian millet, *vavani*, Panicum italicum, is grown to a small extent, both in the hill tracts and in the open country.

Indian corn, *mekke jola* or *musuku jola*, Zea mays, is not regularly grown. Small quantities are raised in gardens for private use.

The seed of some bamboos is used as a grain, especially in times of drought and scarcity.

The Pulses, *akkadi*, grown in North Kánara are black gram, *uddu*, Phaseolus radiatus, and green gram, *hesaru*, Phaseolus mungo, which are raised as a second crop in most parts of the district; and small quantities of pigeon pea, *togari* or *tuvari*, Cajanus indicus; Bengal gram, *kadle*, Cicer arietinum; Syrian lentil, *masur*, Ervum lens; and peas, *batáni*, Pisum sativum, which are grown in Haliyál and Mundgod and in villages bordering on Dhárwár. The acid dew

Crops.

that gathers at night on the leaves of Bengal gram is esteemed a useful tonic, and in some parts of the country is gathered by spreading cloths over the field at night and wringing out the juice in the morning.

Oil Seeds.

Of Jingelly-seed, *volle yellu*, Sesamum indicum, three varieties are grown: *bete* or white, *kare* or black, and *kurásani* or dark-red. Oil-seed is not exported. The oil of all three kinds is generally mixed and is in common use both for cooking and for anointing the body. Oil-cakes are given to cattle as fodder, especially to milch cows and carriage bullocks. Of the castor plant, *vudla* or *harlu*, Ricinus communis, two varieties *chiti* or spotted and *dodda harlu* or large are grown to a very small extent. From the large or *dodda* species medicinal castor-oil is made; the spotted seed yields a greater quantity of oil which is commonly used as lamp-oil. The oil is extracted either by boiling or in a mill.

Of Dye-yielding plants, safflower, or bastard saffron, *kusube*, Carthamus tinctorius, whose flowers are used as a red dye, is widely grown in gardens and in parts of the tableland. Terminalia chebula or *alalemara* yields myrobalans which are largely exported; *shige gida*, Acacia concinna, has a bark which is used for dyeing; and *smatti mara*, Terminalia coriacea, has a dye-yielding bark. A very small quantity of myrobalans are used locally. They and other produce, used in dyeing and tanning, go to Bombay, Bellári, and Belgaum.

Narcotics.

Hemp, *gánje* or *bhangi*, Cannabis sativa, is grown sparingly in gardens for the sake of the narcotic called *bhánj* which is extracted from its leaves, stalks, and flowers.

Spices and Condiments.

Of Spices and Condiments, besides pepper vines, betel vines, and cardamoms of which details have been given, ginger, *alla* or *shunti*, Zinziber officinale, and chillies, *menasina kái*, Capsicum frutescens, are much grown both below and above the Sahyádris.

Coffee.

Between 1855 and 1860 in several gardens in Yellápur and Supa an attempt was made to grow coffee, *káphi* or *bundu*, Coffee arabica, but its cultivation was unprofitable, and has been abandoned. A few plants are still grown in five or six gardens in the north of the district near Supa.

Roots.

Of Bulbous Roots the sweet potatoe, *bella genasu* or *nela kumbala*, Batatas paniculata, and the yam, *heggenasu*, Dioscorea sativa, are widely grown in gardens; the yam sometimes reaches an enormous size.

Sugarcane.

Sugarcane, *kabbu*, Saccharum officinarum, is largely grown both above and below the Sahyádris. It is of three kinds, *rasal* or spotted, *kare* or black, and *bile* or white. *Das kabbu* grows about two inches thick and six to seven feet long, and yields more juice than either of the other kinds. *Kare kabbu* grows about an inch thick and four to five feet long, and *bile kabbu* about half an inch thick and three and a half to four and a half feet long. The *kare kabbu*, whose molasses are reckoned the best, is most grown on the coast, on river and stream banks, near ponds, and in other places where water is available.

Chapter IV. Agriculture.

Crops.

Sugarcane.

In growing sugarcane the ground is well dug, laid open to the sun for several days, and covered two or three feet deep with leaves and brushwood which when dry are set on fire. To the wood-ashes old cowdung mixed with grass is added, and the ground is again turned and laid open to the sun for two or three days. Fresh cowdung ashes and leaves are again applied, and the ground is finally turned and divided lengthwise into beds two or three feet apart. Each bed has a trench a foot and a half wide and about half a foot deep for the water to run throughout the entire length. The trenches are joined at the ends, so that water let into one of the trenches gradually finds its way into the rest and waters the whole garden. Except in some parts where it is as early as January or February, the season for planting sugarcane is April or May. As soon as the beds are ready, the cuttings which for some days, or oven for weeks, have been kept in a cool shady place dipped in cowdung water, are laid in the beds about five inches apart and watered. After it is planted the field is watered every morning by means of a palm-stem channel. In about fifteen days the cane begins to sprout and the watering is daily repeated. When the plants are about a foot high, cowdung manure is added and the ground is cleared of weeds and rank vegetation. This process is continued every month and the beds are raised as the plants grow. When the canes are three feet high each is tied up with its own leaves. This process, which prevents the canes from breaking, is repeated till they reach their full height. Sugarcane is ready for cutting eleven or twelve months after planting.

Molasses.

Almost all husbandmen grow some little sugarcane and make molasses. When the cane is cut, the roots, leaves, and dirt are carefully removed, and the juice is squeezed in a sugarcane-mill. The mill consists of three cylinders moved by a perpetual screw. The force is applied to the centre cylinder by two capstan bars which are worked by hand and require six to ten men at either end. The juice is boiled in iron, brass, copper, or earthen vessels. Lime is added during the process to harden and thicken the liquid. The thickened liquid is either stored in pots or cast into cubical masses by means of wooden moulds. The total cost of raising an acre of sugarcane and of making the juice into molasses is estimated at about £22 (Rs. 220).[1] The outturn of forty *mans* of molasses is estimated to be worth about £20 (Rs. 200), and the value of eight thousand bundles of sugarcane leaves about £3 4*s*. (Rs. 32) more, leaving a net profit of £1 4*s*. (Rs. 12) the acre. This cost of tillage is calculated on hired wages. If, as is generally the case, the landowner himself works, he reaps a profit averaging £4 to £4 10*s*. (Rs. 40-Rs. 45) the acre.

East Indian arrowroot, *kuvegadde*, Curcuma angustifolia, grows wild, and is also cultivated in different parts of the district.

[1] The details are: £2 (Rs. 20) for seed canes; £3 10*s*. (Rs. 35) for preparing ground; 10*s*. (Rs. 5) for planting; £4 10*s*. (Rs. 45) for watering; 10*s*. (Rs. 5) for manure; 10*s*. (Rs. 5) for weeding; 16*s*. (Rs. 8) for fencing and hedging; £1 (Rs. 10) for cutting; £3 4*s*. (Rs. 32) for pressing; 10*s*. (Rs. 5) for boiling; £3 (Rs. 30) for fuel; and £2 (Rs. 20) for contingencies, giving a total of £22 (Rs. 220).